

REMARKS

Applicants thank the Examiner for the thorough consideration given the present application. Claims 8 and 10-12 are currently being prosecuted. The Examiner is respectfully requested to reconsider his rejections in view of the amendments and remarks as set forth below.

Claim Objections

Claim 7 was objected to due to a formality in line 13. This objection is overcome by the cancelling of this claim.

Rejection under 35 U.S.C. 112

Claim 9 stands rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. This rejection is respectfully traversed. The claim has been cancelled, rendering this rejection moot.

Claim 8 stands rejected under 35 U.S.C. 112, second paragraph, as being indefinite. This rejection is respectfully traversed.

The Examiner states that it is unclear whether it is the MOS FETs or the drain region that is directly connected to the pad. By way of the present Amendment, Applicants have amended the last line

of claim 8 to make it clear that the drain regions are commonly and directly connected to the pad. Accordingly, this objection is overcome.

Rejection under 35 U.S.C. 103

Claims 5-8 stand rejected under 35 U.S.C. 103 as being obvious over Chishiki (USP 5,714,796) in view of Igarashi (USP 5,656,491) or Steudel (USP 3,712,995). This rejection is respectfully traversed.

In regard to claims 5-7, these claims have been cancelled, rendering this part of the rejection moot.

The Examiner states that Chishiki teaches an ESD protection component having two MOS field effect transistors of a first conductivity with two gates formed in parallel on a first semiconductor layer of a second conductivity type. The Examiner states that the reference also has a first well 33 having a first conductivity type with a connecting area formed between the FETs and a first doping area of the second conductivity type formed in the connecting area. The Examiner admits that this reference does not teach a first well having two parallel extension areas formed perpendicular to the gates. The Examiner relies on Igarashi and

Steudel to teach the concept of parallel extension areas. The Examiner states that it would have been obvious to use a first well having two parallel extension areas in the Chishiki device in order to reduce the contact resistance of the device by enlarging the contact area of the first well. Applicants submit that claim 8 is not obvious over this combination of references.

Claim 8 has now been amended to point out that the ESD protection component includes at least two MOS FETs, a first well, a connecting area, two parallel extension areas, and a first doping area where each of the MOS FETs has a drain region commonly and directly connected to a pad. Applicants submit that none of the three references, either alone or in combination, teach or disclose drain regions commonly and directly connected to a pad. Thus, in Chishiki, the drain regions 27b and 29b are connected to two different pads DP and Nout. This differs from the present invention where the drain regions are commonly connected to a single pad. Thus, claim 8 is not obvious over this reference.

Furthermore, Applicants submit that there is no motivation to combine the references as suggested by the Examiner. In particular, the Examiner points out that it would have been obvious to make the combination in order to reduce the contact resistance by enlarging

the contact area of the first well. However, the contact resistance device is indefinite. Thus, the contact resistance is resistance between a given device and another device connected thereto. Chishiki's device has more than one element that may be connected to an external device and accordingly, has more than one contact resistance such as the contact resistances of the source regions 27a and 29a, the drain regions 27b and 29b, the first well and the semiconductive layer 21. It is not clear which contact resistance the Examiner is referring to.

Furthermore, even assuming that the contact resistance refers to that of the first well, there is no teaching of the necessity of reducing the contact resistance. Chishiki teaches nothing about the advantages of contact resistance reduction. Igarashi simply teaches two regions acting as resistors. Steudel teaches that a resistor region, rather than a well, has contact zones large enough for easy contact. The first well in Chishiki's device simply acts as a bulk of the resistor 26. The open area is a contact region for reduction of the contact resistance to the well 33 and permits easy contact with pad Vdd1. Thus, no significant improvement is achieved by further reducing the contact resistance of well 33 or making the contact easier. Accordingly, there is no motivation to modify the

shape of the well 33 in Chishiki's device. Accordingly, Applicants submit that claim 8 is not obvious over these three references. Accordingly, claim 8 is patentable.

Claims 10-12 depend from claim 8 and as such, are also considered to be allowable. In addition, each of these claims recites other features not seen in the references. Thus, in claim 10, a first doping area directly connected to the pad is recited. This feature is not seen in any of the references. Claims 11 and 12 describe the connections at the source region to the power rail and the first well to the pad through the extension areas. Applicants submit that these claims are also allowable.

Conclusion

In view of the above remarks, it is believed that the claims clearly distinguish over the patents relied on by the Examiner, either alone or in combination. In view of this, reconsideration of the rejections and allowance of all the claims is respectfully requested.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Robert F. Gnuse (Reg. No. 27,295) at the

Appl. No. 09/974,056

Amendment filed April 15, 2004

Reply to Office Action of January 15, 2004

Page 9 of 9

Art Unit: 2811

telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

BIRCH, STEWART, KOLASCH & BIRCH, LLP

By 
Joe McKinney Muncy, #32,334
for #43,368
P.O. Box 747
Falls Church, VA 22040-0747
(703) 205-8000

KM/RFG/gf
0941-0342P

Attachment(s)

0941-0342P